REMARKS

Claims 1-3, 7, 10-16, 18, 19 and 29 are cancelled by this amendment. Claim 17 is amended. Claims 30-35 are new.

Claims 17-19, 21, 22, 25, 26 were rejected under 35 U.S.C. 103 over Hagiwara (U.S. patent no. 5,847,427) in view of Misium (U.S. patent no. 6,261,973) and Chou (U.S. patent no. 6,426,305).

Claim 17 recites "nitriding the silicon surface of the first layer by remote plasma nitridation". Hagiwara and Chou do not teach remote plasma nitridation ("RPN").

Misium is directed to RPN of silicon dioxide layers to make the silicon dioxide "resistant to etch chemistries" (col. 3, lines 26-28). Misium is not directed to RPN of a silicon surface as recited in Claim 17. In Misium's Figs. 3B, 3C, a process is illustrated in which a nitrided layer 22 forms not only on silicon dioxide 32 but also on silicon substrate 10 and polysilicon gate 30. It appears however that the nitridation of silicon 10, 30 is a side effect and not a goal of Misium's process (Misium, col. 4, lines 19-34). Misium does not teach that any benefits are obtained from an RPN of a silicon surface.

Hagiwara teaches introducing nitrogen into polysilicon floating gate 202 by ion implantation or by exposing the polysilicon to a nitrogen containing atmosphere (col. 7, line 59 through col. 8, line 3). The goal of Hagiwara is prevent the formation of bird's beaks at the upper edges of the floating gate during a "post oxidation" procedure (see Abstract and col. 3, lines 12-22 and 45-52). Misium does not teach that his incidental RPN of a silicon surface would prevent the bird's beak formation in the process of Hagiwara.

Moreover, Hagiwara teaches away from using the RPN in his process. Hagiwara teaches that the best process for the nitridation of the floating gate 202 is the "exposure" method (exposure of the floating gate to a nitrogen containing atmosphere) because the exposure method can be performed using the same CVD device as the subsequent step of forming "the interpoly insulation film" (col. 8, lines 4-13). Hagiwara thus teaches away from performing the nitridation using a device other than a CVD device suitable for the subsequent formation of the interpoly insulation film. Misium does not teach performing an

RPN process in a CVD device of Hagiwara. See MPEP 2145, subsection X.D.2 ("References Cannot Be Combined Where Reference Teaches Away from Their Combination").

Chou is cited for the teaching of decoupled plasma nitridation (DPN). Claim 17 is amended not to recite DPN.

Claims 20-28 depend from Claim 17.

Claims 17, 20, 28 were rejected under 35 U.S.C. 103 over Lin (U.S. patent no. 6,127,227) in view of Misium and Chou.

Lin and Chou do not teach RPN.

Lin introduces nitrogen into polysilicon 120 to reduce the polysilicon oxidation rate in order to form a better ONO layer for a flash memory cell.

As discussed above, Misium is directed to RPN of silicon dioxide, not polysilicon as in Lin. Misium does not disclose that any benefits are obtained form his incidental RPN of silicon in the process of Figs. 3B, 3C. Misium does not teach that his incidental RPN of silicon would work as intended in Lin.

Chou is cited for his teaching of DPN. DPN is no longer recited in Claim 17.

New Claim 30 is believed to be allowable for reasons similar to the reasons given above for Claim 17.

New Claim 31 is supported by Applicant's original specification, page 4, line 1. Claims 32-35 is supported by the specification, page 4, line 18 through page 5, line 2.

Claims 31-35 are believed to be allowable because they depend from Claim 30.

Any questions regarding this case can be addressed to the undersigned at the telephone number below.

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